

Drainage Reports



DAVID EVANS AND ASSOCIATES INC.

DATE: July 7, 2018

TO: Zoning Case Drainage Reviewer

City of Scottsdsale Once Civil Center Scottsdale, AZ

FROM: Vicente Ruiz

SUBJECT: Marquee Zoning Preliminary Drainage Report

PROJECT: 7-ZN 2015

Marquee

CC:

This Drainage memo serves as an update and explanation of resubmittal of the previously approved Preliminary Drainage Report. The developer, Stockdale Capital Partners, LLC, is resubmitting this project for zoning approval due to increasing the building height by 2 stories. Other than this increase in square footage, the overall footprint has remained the same. DEA has provided the previously approved preliminary drainage report attached to this Memo.

It is understood that new first flush requirements have been implemented for new projects in the City of Scottsdale. This typically requires the first 0.5" inch of runoff to be stored onsite, or be treated before entering the City storm drain. What DEA has proposed and have had accepted by the City Water Quality Specialist on similar projects is allowing direct roof runoff to be considered clean rain water, and not subject to storage or pre-treatment. Areas that have mechanical equipment exposed to rainfall or subject to vehicular traffic will convey runoff to oil separator tanks, and then discharged to sanitary sewer.

Roof drains will connect directly into the adjacent storm drain system along the southern property boundary. Sanitary sewer is available in Shoeman Lane or at the southwest corner of the site at Scottsdale Road for the oil separator connections.

Please contact me if there are any questions or concerns.

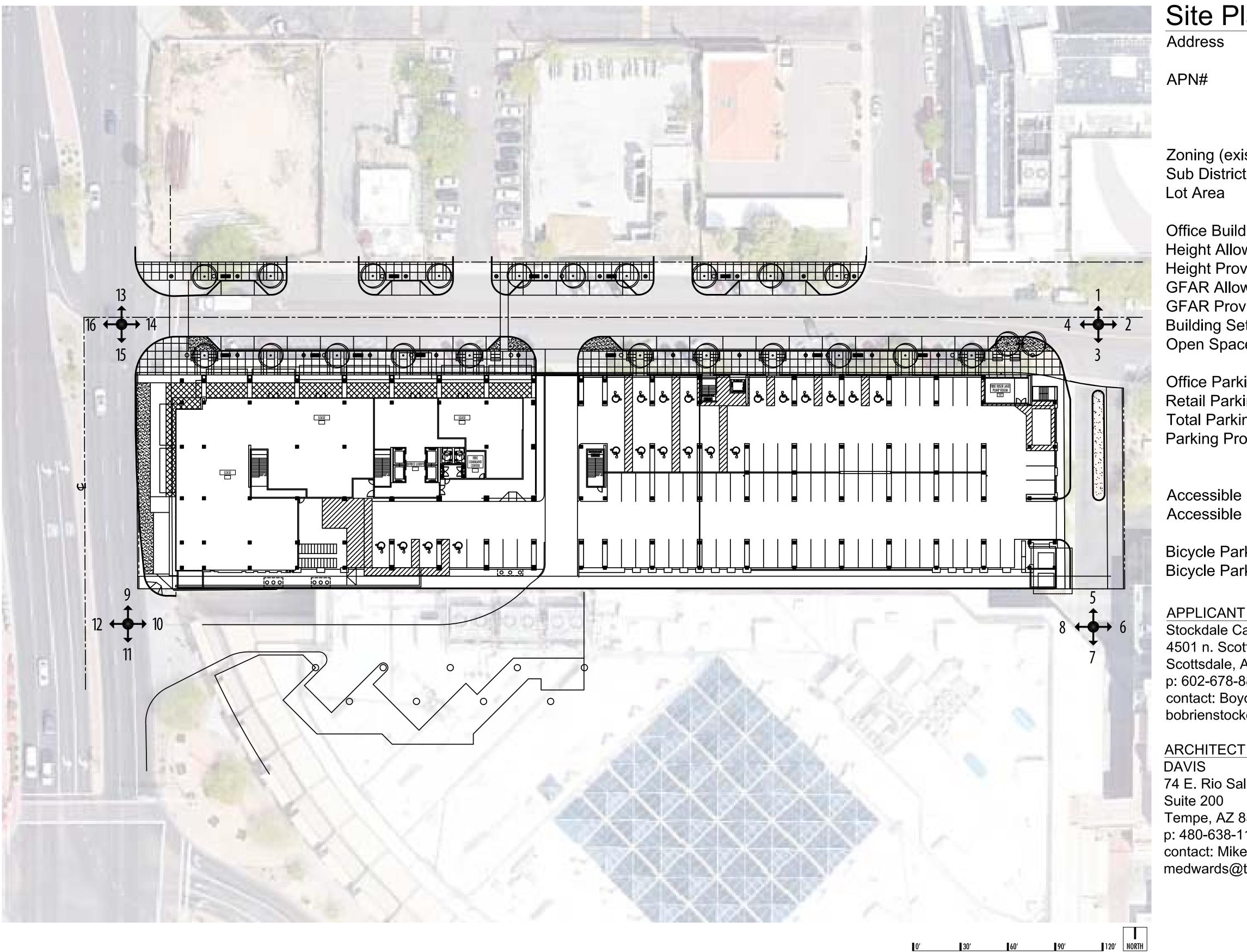
Sincerely,

Vincente Ruiz, P.E.

Attachments/Enclosures: List Items

File Path: Document1





Site Plan

Address

APN#

173-41-011 173-41-010 173-41-264 C2-DO/C3-DO

Zoning (existing/proposed) **Sub District** Lot Area

Office Building Area: Height Allowed Height Provided **GFAR Allowed GFAR Provided Building Setback** Open Space

Office Parking Required Retail Parking Required **Total Parking Required** Parking Provided

Accessible Parking Required Accessible Parking Provided

Bicycle Parking Required Bicycle Parking Provided

Stockdale Capital Partners, LLC 4501 n. Scottsdale Road, #201 Scottsdale, AZ. 85251

p: 602-678-8888 contact: Boyce O'Brien bobrienstockdalecapital.com

ARCHITECT **DAVIS** 74 E. Rio Salado Parkway Suite 200 Tempe, AZ 85281 p: 480-638-1100 contact: Mike Edwards medwards@thedavisexperience.com

4419 N. Scottsdale Rd. Scottsdale, AZ 85251

173-41-007A

Downtown Multiple Use Type 2 1.96 acres net (85,189 sf) 2.59 acres gross (112,765 sf)

278,015sf 66'-0"

120'-5" (Top of Mechanical)

1.3 (3.0 with Bonus)

2.47

15'-0" from curb Not Required

884 spaces (1/300sf) 52 spaces (1/300sf) 935 spaces

978 spaces (incl. 19 street parking spaces)

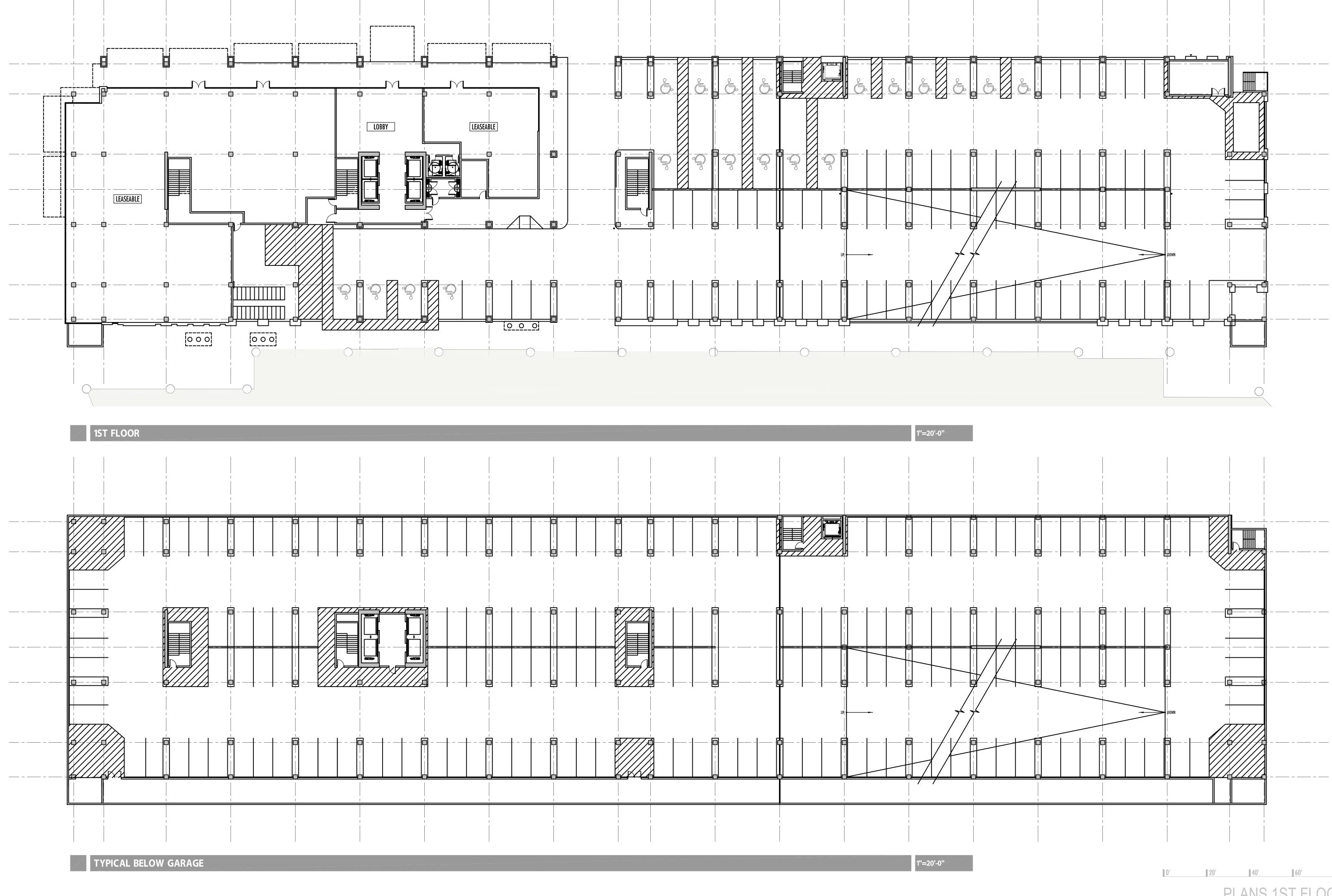
20 spaces

20 spaces (17 standard; 3 van)

69 spaces (1 per 10 spaces req.)

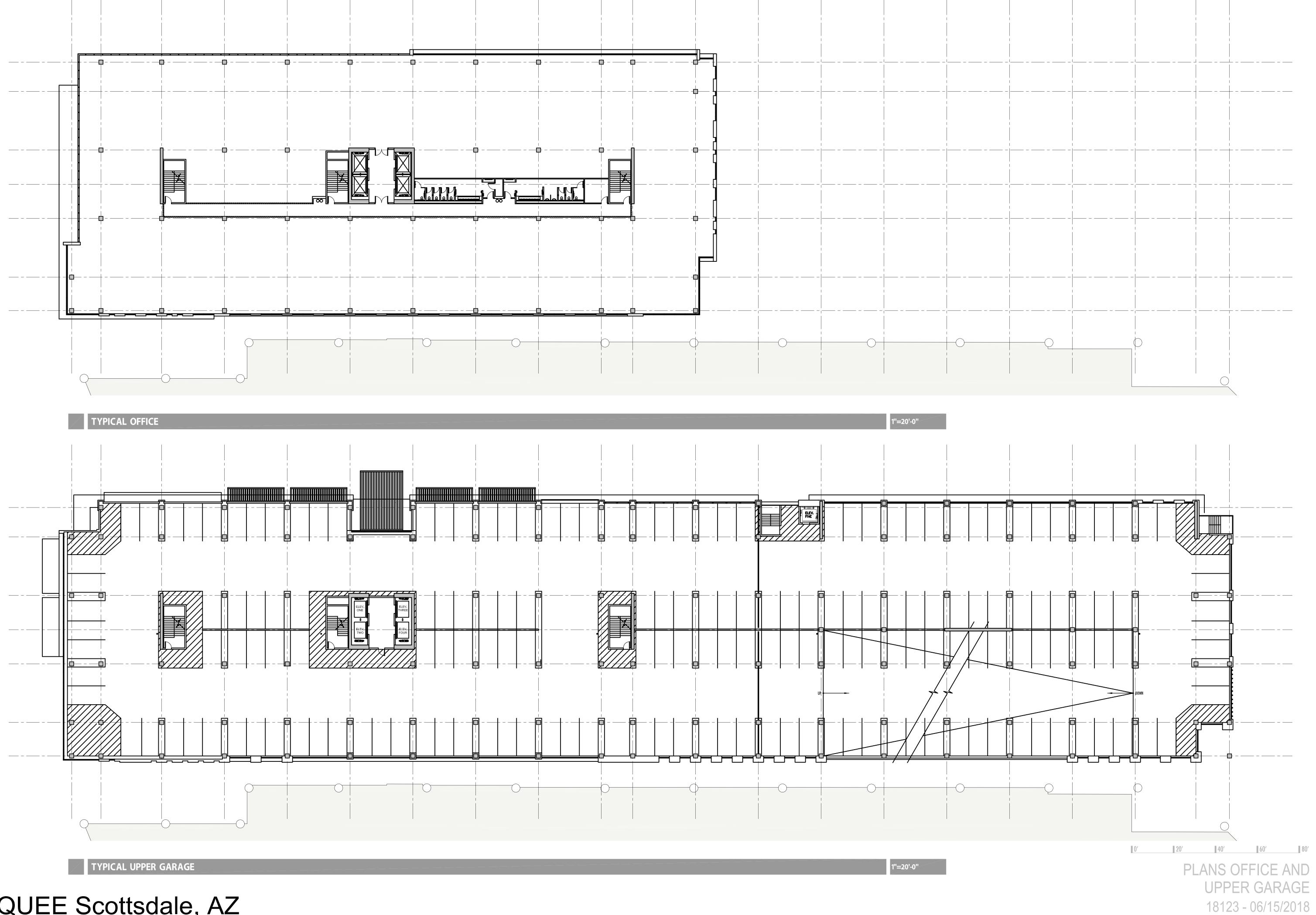
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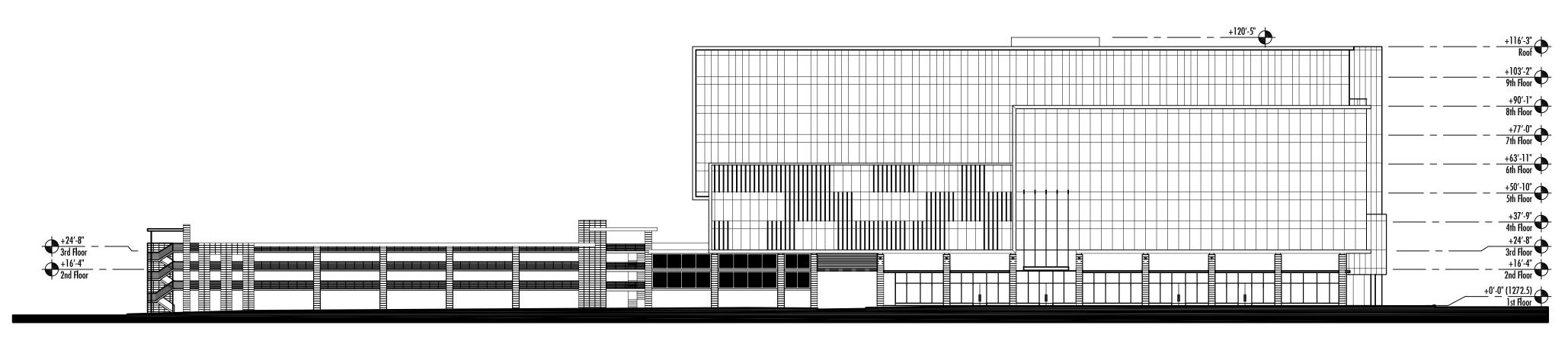
DAVIS



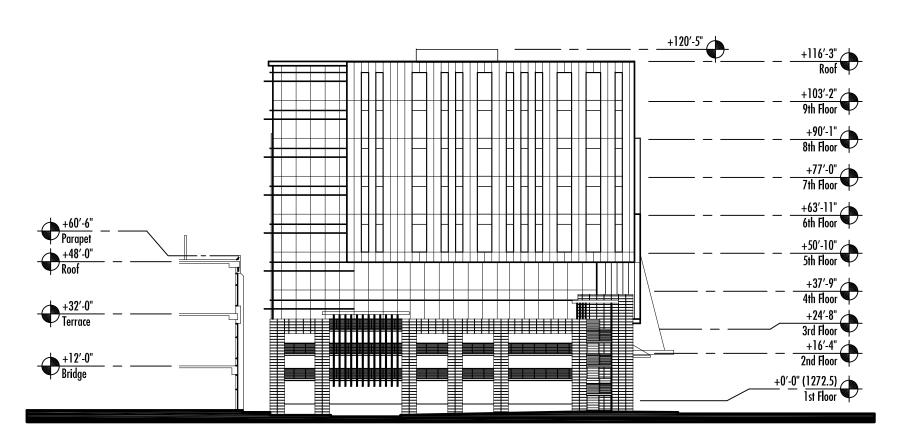
MARQUEE Scottsdale, AZ

PLANS 1ST FLOOR AND BELOW GRADE 18123 - 06/15/2018

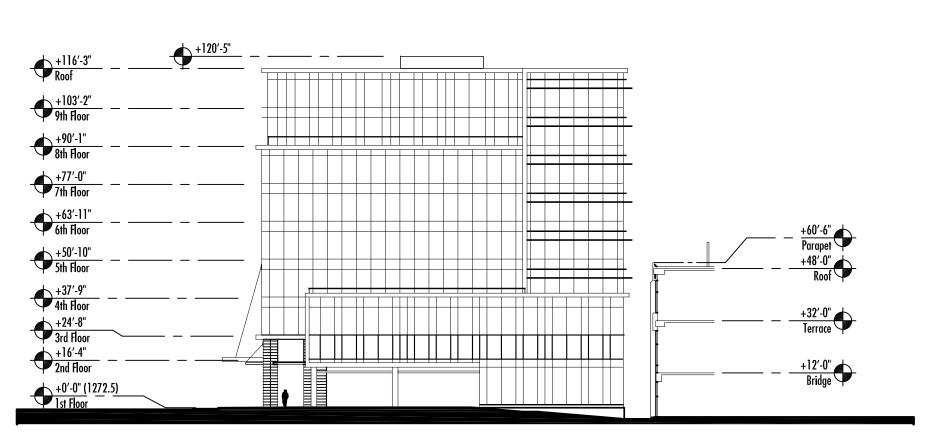




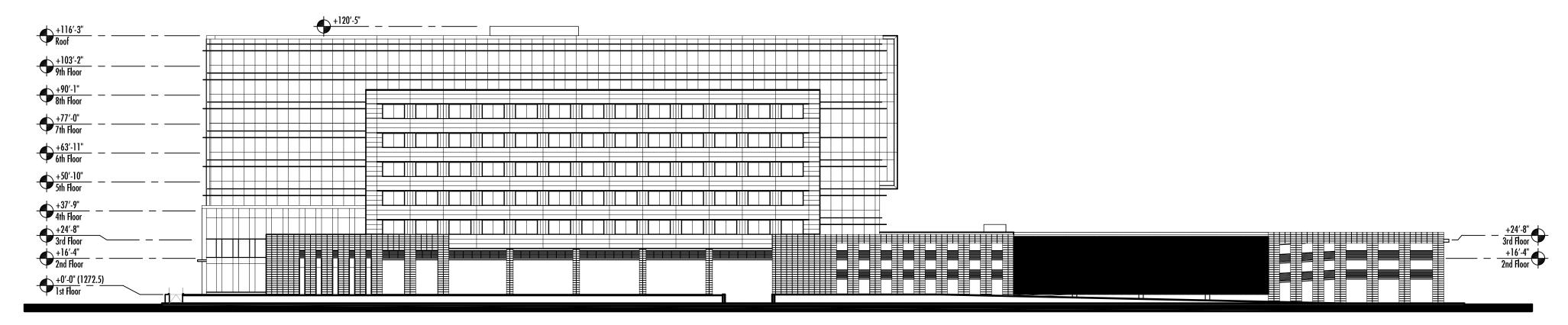
North Elevation



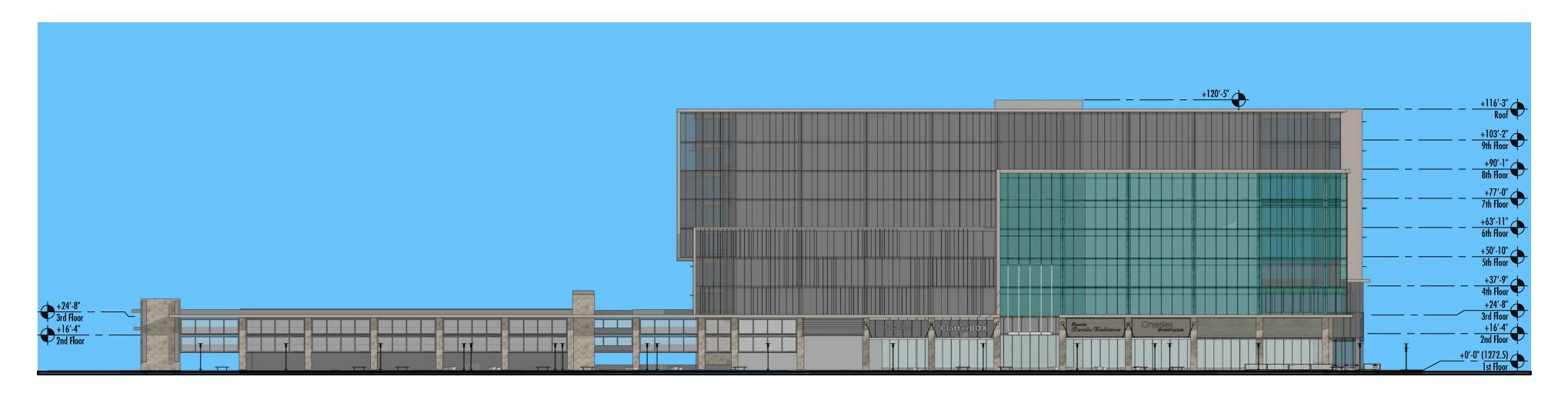
East Elevation



West Elevation



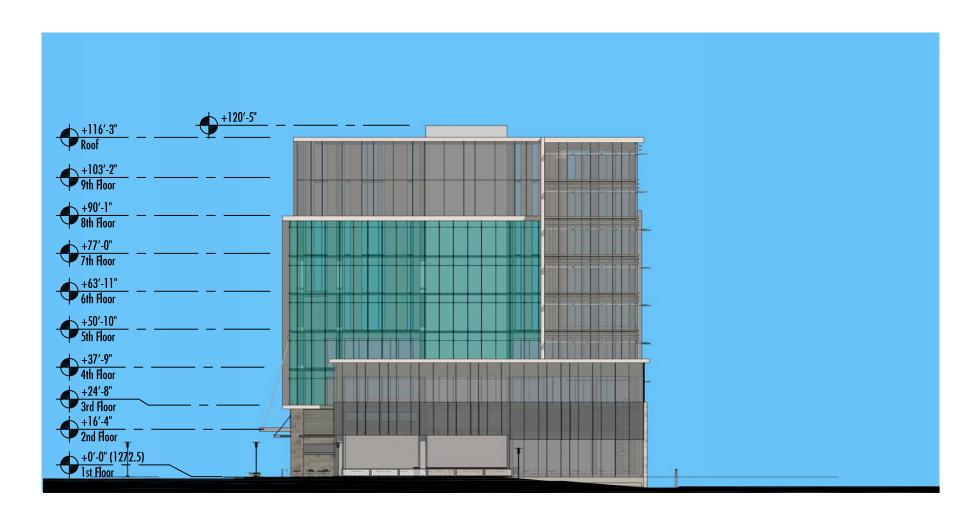
South Elevation



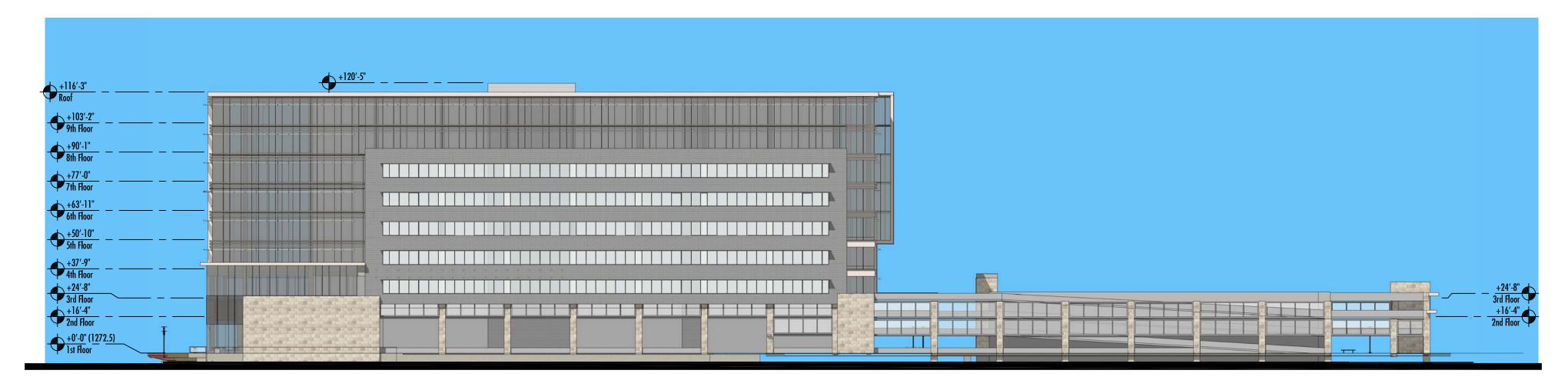
North Elevation



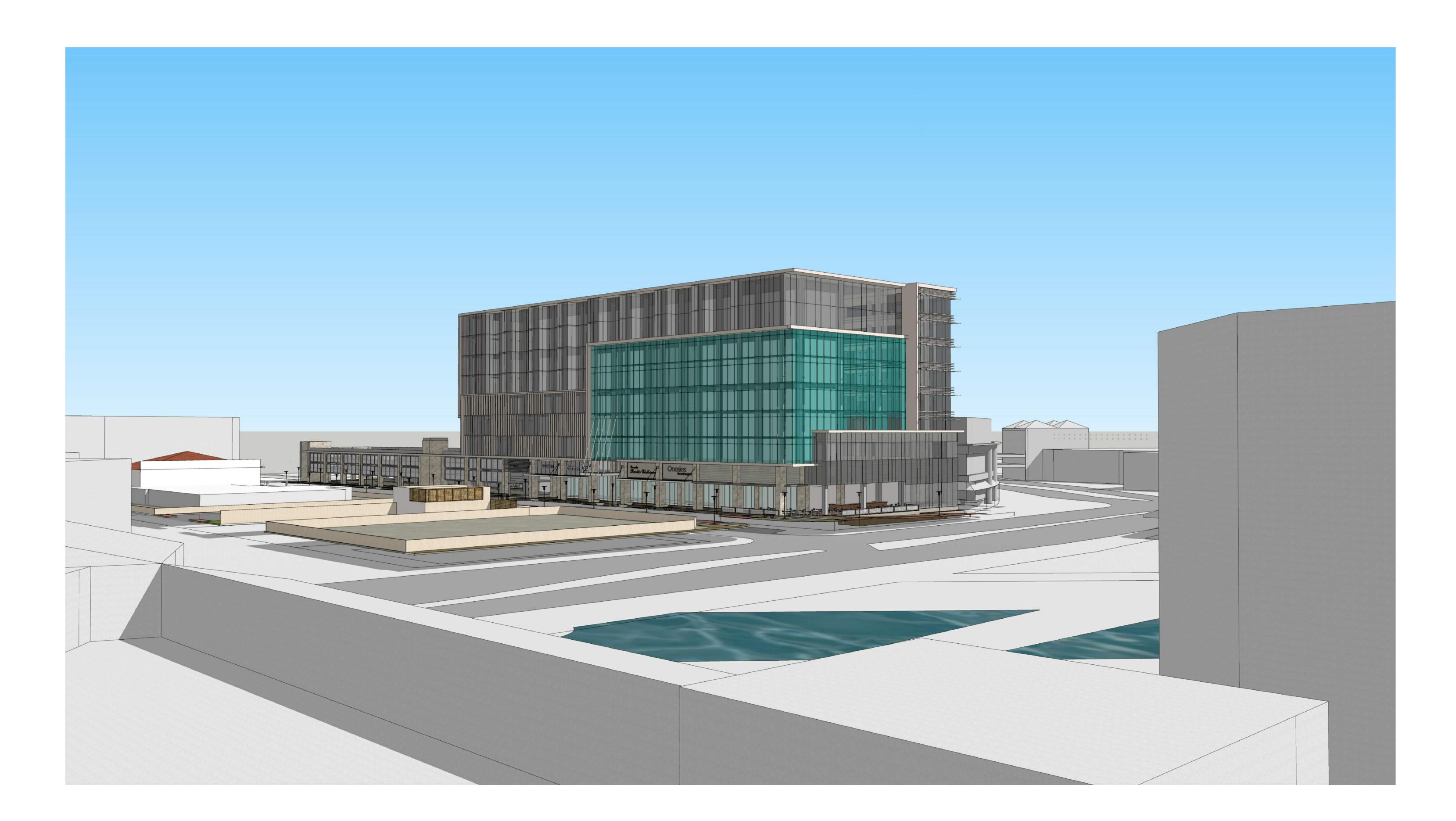
East Elevation

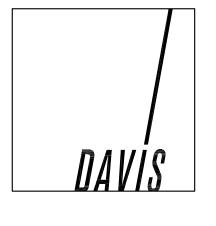


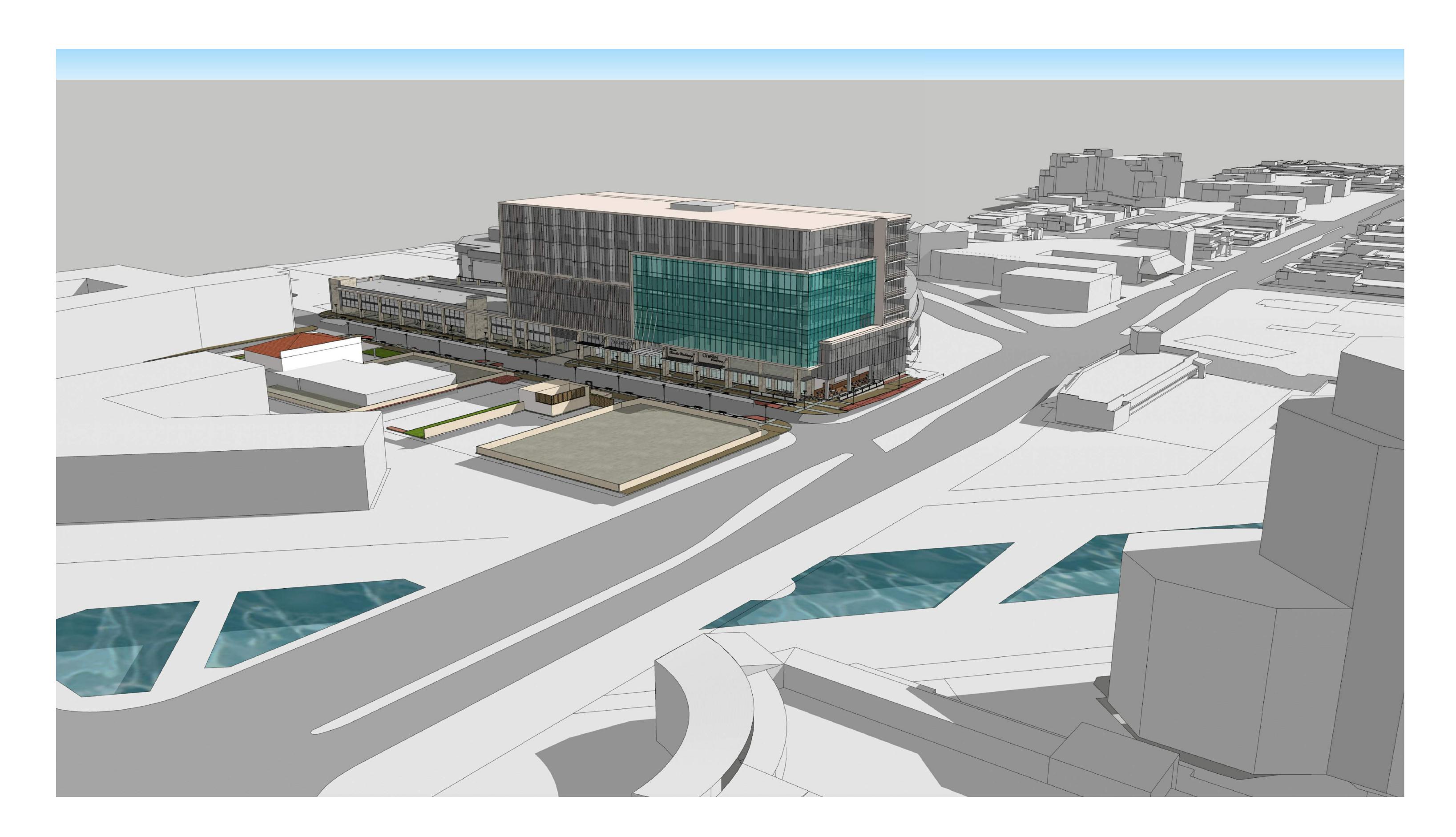
West Elevation

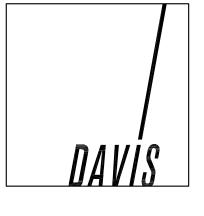


South Elevation

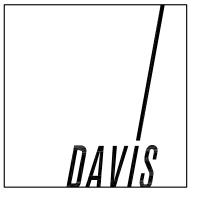




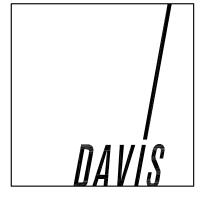












Preliminary Drainage Report For

Marquee @ The District SEC Scottsdale Road and Shoeman Lane Scottsdale, Arizona

Plan #
X Accepted Corrections
M. Rahman 9/15/15 Reviewed By Date

August 2015 7-ZN-2015



Prepared by:

Hunter Engineering, Inc. 10540 North 74th Street, #200 Scottsdale, AZ 85258

PRELIMINARY DRAINAGE REPORT FOR

MARQUEE @ THE DISTRICT SEC SCOTTSDALE ROAD AND SHOEMAN LANE SCOTTSDALE, AZ.

PREPARED FOR

LGE DESIGN BUILD 740 NORTH 52ND ST. PHOENIX, AZ 85008

PREPARED BY

LARRY TALBOTT, P.E. HUNTER ENGINEERING, P.C. 10450 NORTH 74TH STREET, #200 SCOTTSDALE, AZ 85258 (480) 991-3985

H.E. PROJECT NO. LGEC189

SECTION	TITLE	PAGE NO.
1.0	Introduction	Ī
2.0	Existing Drainage Conditions	1
3.0	Proposed Drainage Concept	2
4.0	Conclusions.	2
FIGURES 1 2	TITLE Vicinity Map FEMA Flood Map	LOCATION Appendix A Appendix A
EXHIBITS A	TITLE Drainage Exhibits	LOCATION Back Pocket
APPENDIX A B	TITLE Figures Drainage Calculations	Appendix A Appendix B



1.0 INTRODUCTION

This preliminary drainage report has been prepared under a contract from LGE Design Build, developer of the Marquee @ The District project. The purpose of this preliminary drainage report is to provide a preliminary drainage analysis as requested by the City of Scottsdale to support the proposed multi story building development.

This project is located south of Shoeman Lane east of Scottsdale Road, within the City of Scottsdale, Maricopa County, Arizona. The site is in a portion of Section 23, Township 2 North, Range 4 East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona, Figure 1, in Appendix A, illustrates the location of the project site in relation to the City of Scottsdale street system. The proposed access to the site will be provided via Shoeman Lane

The development is for a proposed multi-story office, retail and parking consisting of approximately 2± acres. Improvements to be made on-site include the proposed multi-story building, parking structure and landscaped areas.

The current FEMA Flood Insurance Rate Map (FIRM) for this area, map number 04013C1770 L (Revision date October 16, 2013) shows the entire project site is in a flood hazard Zone X. Zone X is defined as, "Areas determined to be outside the 0.2% annual chance floodplain".

2.0 EXISTING DRAINAGE CONDITIONS

The proposed site is currently developed with a two story mixed use building, a separate single story building and parking over the majority of the site. Even though the city contour maps show depressed area on the site the site does not provide any detention. The depressed areas are the existing collection low points on the site. The collections points are existing catch basins and trench drains as described late in this section.

There is an existing storm drain that flows west to east along the south property line. This starts at a catch basin just west of the service drive. The storm drain outfalls into the existing storm drain system in the eastern drive. This storm pipe not only collects water from the site, but also the Galleria's roof drain system.

There is an existing service drive for the adjacent Galleria development to the south that runs north south through the middle of the site. The separates the site area flows into the flows generated west of this service drive and east of the service drive. There is an additional drive on the site eastern property boundary. Both the service drive and the eastern drive slope down from Shoeman Lane toward the Galleria building and are collected via existing trench drains near the south property line. These trench drains are connected to the existing site storm drain.

The area west of the service drive flows to an exist catch basin located at the southeast corner of this area. This catch basin collects the storm water for this area and routes it into the existing storm drain pipe that runs to the east into the storm drain system within the eastern drive.

The area east of the service drive is directed toward an existing valley gutter that runs along the north side of the southernmost parking field. This valley gutter outlets into an existing catch basin located at the southeast corner of this area. The catch basin also outfalls into the existing storm drain system in the east service drive.

3.0 PROPOSED DRAINAGE CALCULATIONS

The proposed development will increase the hardscape area since it will include slightly less landscape area. The site was analyzed for these increases based upon a weight 'C' coefficient of 0.95 for hardscape area and 0.50 for landscape area.

The resultant net retention increase for the 100yr-2hr storm event is 464 cubic feet, which is a minimal 3.4% of the of the overall existing required retention of 13,528. The 100yr flow increase would be 0.44cfs which is also 3.4% of the existing overall 100yr flow. See Appendix B for calculations.

These flow increases are considered minimal at less than 5% and will not significantly affect the existing drainage patterns. Therefore no detention is proposed for this development.

Since the majority of the run-off for this project will be developed via the roof and parking structure these flows will be pipe directly into the existing storm drain system via the building's roof drains. This allows for more flexibility in delivering the flows to the existing storm drain.

The flows will be add to the existing system either at the same location as they do now or downstream. Flows added downstream relieve the upstream section of the pipe.

4.0 CONCLUSIONS

The site will maintain the existing site flow patterns. Run-off increases are considered minimal without significant affect.

APPENDIX A FIGURE

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equated or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A. AE. AH. AO. AR. A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding): Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, volocities also delermined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently describined. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

FLOODWAY AREAS IN ZONE AE

ZONE X

substantial increases in flood heights. OTHER FLOOD AREAS

Areas of 0,2% annual chance flood; areas of 1% annual chance flood with average depins of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by teves from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

C9RS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas

1% annual chance floodplain boundary

 0.2% annual chance floodplain boundary

Zone D boundary
CBRS and OPA boundary

FIRM FLOOD INSURANCE RATE MAP MARICOPA COUNTY, ARIZONA

AND INCORPORATED AREAS

PANEL 1770 OF 4425

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	<u>NUMBER</u>	<u>PANEL</u>	<u>SUFFIX</u>
MARICOPA COUNTY	040037	1770	L
PARADISE VALLEY, TOWN OF	040049	1770	L,
SCOTTSDALE, CITY OF	045012	1770	L

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



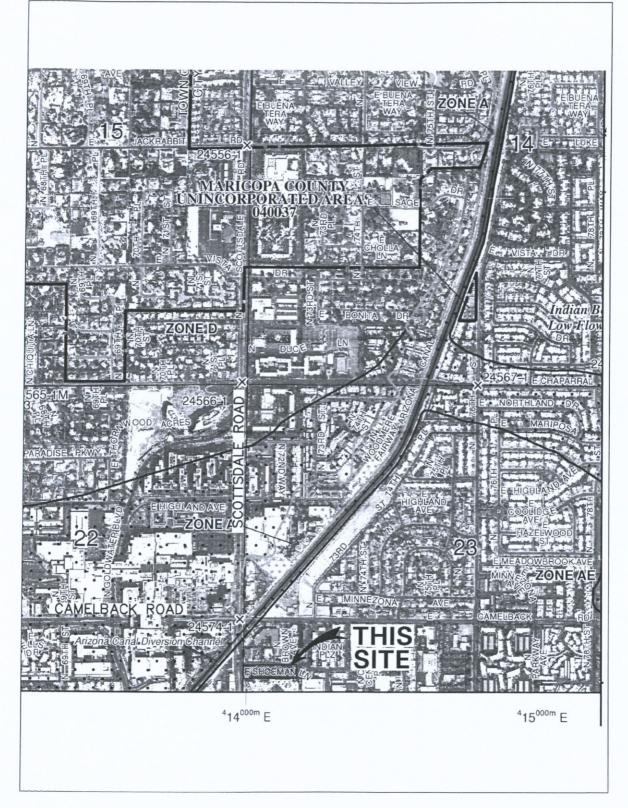
MAP NUMBER 04013C1770L MAP REVISED

OCTOBER 16, 2013

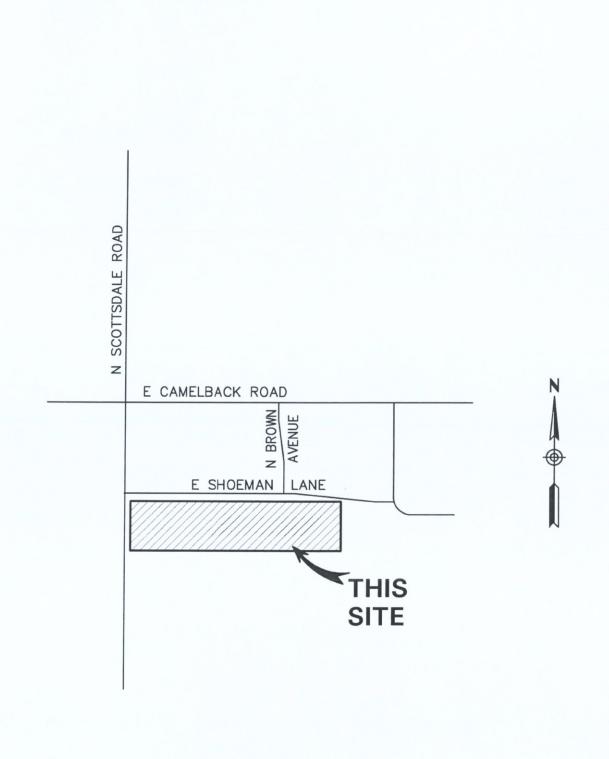
Federal Emergency Management Agency

MAP LEGEND

FIRM PANEL



PORTION OF PANEL SHOWING SITE FIGURE 2



VICINITY MAP FIGURE 1

APPENDIX B DRAINAGE CALCULATIONS

Detention Calculations

Vr=C*P*A*43,560, C=0.95 Hard, P=2.2 Design Storm: 100-year, 2-hour

C=	0.95 Ha	rd	0.50 Landscape
P=	2.2	inches	

Existing Conditions

HOI	guire	\sim
116	luii e	u

Location Type		Area (AC)	'C' Coefficient	D Coefficient	Required (cf)
HA1	Hardscape	0.701	0.95	2.2	5,318
HA2	Hardscape	0.078	0.95	2.2	592
HA3	Hardscape	0.769	0.95	2.2	5,834
HA4	Hardscape	0.113	0.95	2.2	857
LA1	Landscape	0.004	0.50	2.2	16
LA2	Landscape	0.038	0.50	2.2	152
LA3	Landscape	0.033	0.50	2.2	132
LA4	Landscape	0.065	0.50	2.2	260
LA5	Landscape	0.017	0.50	2.2	68
LA6	Landscape	0.067	0.50	2.2	268
LA7	Landscape	0.004	0.50	2.2	16
LA8	Landscape	0.004	0.50	2.2	16
		1.893	0.89	-	13,528

Proposed Conditions

Required

Location	Type	Area (AC)	'C' Coefficient	D Coefficient	Required (cf)
HA1	Hardscape	1.790	0.95	2.2	13,580
LA1	Landscape	0.016	0.50	2.2	64
LA2	Landscape	0.087	0.50	2.2	347
		1.893	0.93	-	13.991

13,991 ft³ Proposed 13,528 ft³ Existing 464 ft³ Additional

EXISTING FLOW CONDITIONS

DESIGN DATA

Drainage Area 1.893 Acres

DESIGN COMPUTATIONS

Runoff Coefficient 0.89

Time of Concentration, Tc _______ 5 Minutes

Frequency	2	5	10	25	50	100	Years
Rainfall Intensity	3.05		4.85			7.56	Inches/Hr
Peak Discharge	5.17		8.22			12.81	Ft3 / Sec

PROPOSED FLOW CONDITIONS

DESIGN DATA

Drainage Area 1.893 Acres

DESIGN COMPUTATIONS

Runoff Coefficient _______0.93

Time of Concentration, Tc _____ 5 Minutes

Frequency	2	5	10	25	50	100	Years
Rainfall Intensity	3.05		4.85			7.56	Inches/Hr
Peak Discharge	5.34		8.50			13.25	Ft3 / Sec

FLOW INCREASE

 Q_{100} = 0.44 cfs Q_{10} = 0.28 cfs Q_2 = 0.18 cfs

